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Amendment to Claims

1.(Currently Amended)A method for operating a cryocooler for providing refrigeration to a refrigeration load comprising:

(A) generating refrigeration by operating a cryocooler having a regenerator, a cold heat exchanger and a thermal buffer tube;

(B) monitoring temperature trending of at least one of the circumferential temperature variation of the regenerator and the temperature profile of the thermal buffer tube, the cold heat exchanger, the thermal buffer tube and the refrigeration load, and employing the temperature trending to calculate a service time; and

(C) servicing the cryocooler if the calculated service time is less than a predetermined value.

2.(Currently Amended)The method of claim 1 wherein the monitored temperature trending that is monitored is both the rate of temperature change of the cold heat exchanger and the at least one of the circumferential temperature variation of the regenerator and the temperature profile of the thermal buffer tube.

Cancel claim 3.

Cancel claim 4.

5.(Currently Amended)The method of claim 1 wherein the monitored temperature trending that is monitored is both the temperature of the refrigeration load and the at least one of the circumferential temperature variation of the regenerator and the temperature profile of the thermal buffer tube.

6.(Original)The method of claim 1 wherein the predetermined value is ten days.

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7.(Original)The method of claim 1 wherein the cryocooler is operating at less than 30 hertz.